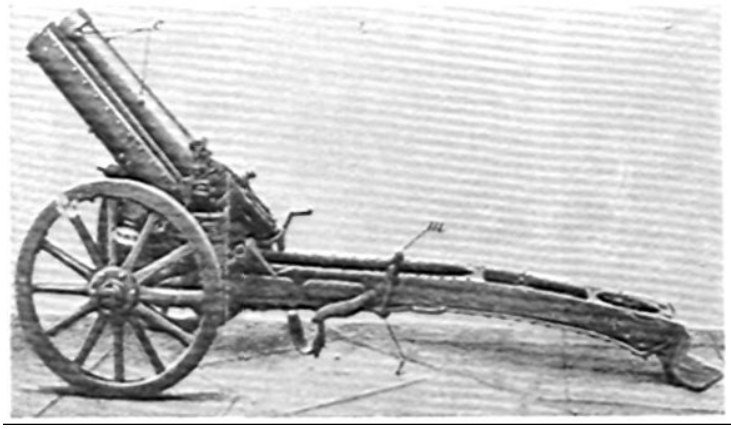
Italian Artillery

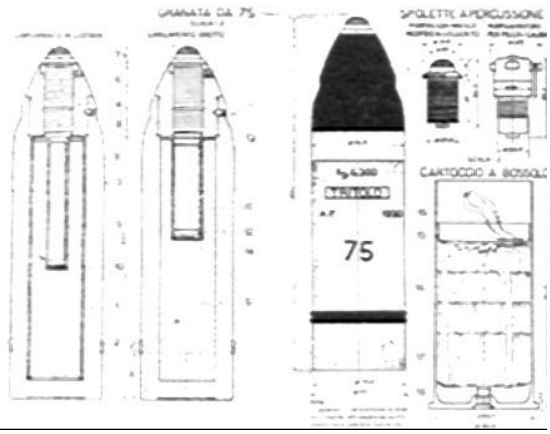
By Lt. Col. G. B. Jarrett, Ord.

A 20-mm Breda AA gun appears at upper right. Below it is a 77/28 with the old Austrian wheels, not modernized. In left center is a 65/17 pack howitzer captured by Indian troops in Libya. At the bottom of the page, at left is a 75-mm Skoda howitzer, Model 1915, called the 57/13 by the Italians; at right are examples of old pattern 75-mm shells used in both World Wars.

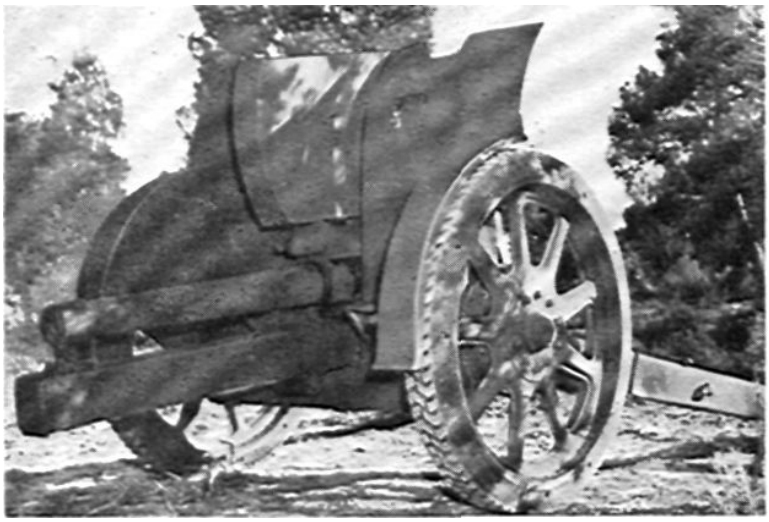
In looking over the Italian artillery pieces one wonders what policy could have been followed, in view of the hodgepodge of weapons and calibers found among the Allied captures throughout this war. Since 1918, in all Ordnance matters the Italian military leaders have had a policy whereby any captured piece on hand would be used "as is" or slightly modified. Some instances suggest that logical development of a better piece by their own engineers was stifled in favor of these modifications, although some parallel research was carried out in the late '20s and '30s. The net result was an illogical series of artillery on hand for World War II.

This situation contributed to the poor showing of Italian arms in 1940-43. Their artillery support failed them badly, even though the Italian gunner was usually a very brave





75/27 Mod. 12, modernized with rubber-tired wheels.



75/27 M11 showing tube locked down for transport. This piece was captured at Gafsa, Tunisia, 7 Feb 43.

Ansaldo 75/46 AA gun.

man. Briefly, their troubles lay in poor design of both carriages and ammunition.

Too many of the Italian regimental weapons were field pieces captured from the Austrians in the Piave battles of 1918. Many of these had not been modernized at all, and even had an Italian serial number stamped on with the original Austrian number crossed out. Pieces of this vintage rarely had much traverse or elevation, and with box trails (or at best a modified box design), naturally their field of fire was restricted. The horse-drawn type of steel-tired wooden wheels was still on many of these pieces, cutting mobility to that of 1918 warfare. In 1940 Wavell's armies, poorly equipped and with barely a fourth the strength of Italian forces in Africa, relentlessly ran down first Graziani in Libya and then the Duke of Aosta's men in East Africa. By May of 1941 all Italian resistance had ceased in East Africa, a bitter blow to Italian prestige.

Ammunition in many of the dumps captured in Eritrea was often found to be some originally taken from the Austrians in 1918, Italian copies of more recent manufacture, or occasionally some of their own designs. All this ammunition found in Eritrea was the flat-based, basic HE type with unreliable fuze systems not at all acceptable to modern ordnance engineering for safety, accuracy, reliability, and optimum ranges. These causes made for miserable and inadequate artillery support.

In 1918 the Italians had obtained the French Schneider 105s, building them afterward at Ansaldo. Many of these found in Eritrea had been slightly modified for higher speed towing. A trailer had been devised upon which the piece with its wooden, steel-rimmed artillery wheels rested for transport. The final modification of this piece consisted of a new, light, cast alloy wheel with hard rubber tires, specimens of which appeared in Libya.

The 6″ field of both howitzers and guns was covered in a series of 1890-1918 designs of many schools of thought. Krupp took most honors. Skoda was second, then followed Italian designs. Six-inch guns taken in East Africa were as a rule all non-recoil types employing wooden ramp-rocker devices to take up recoil, with a ski-type device on the tail, replaced in more conventional trails by a spade. Most of these guns were from 149- to 152-mm in caliber, and provided with flat-base, blunt ogive types of projectiles which included shrapnel, HE, and some chemical-filled shells. In the '30s some streamlined shells were introduced for most calibers.

In reading the following discussion of some of the more interesting weapons, it would be well to remember that Italian practice is to refer

to the caliber in millimeters followed by the tube length in calibers. Thus 65/17 means a 65-mm bore diameter and a tube 17 calibers long.

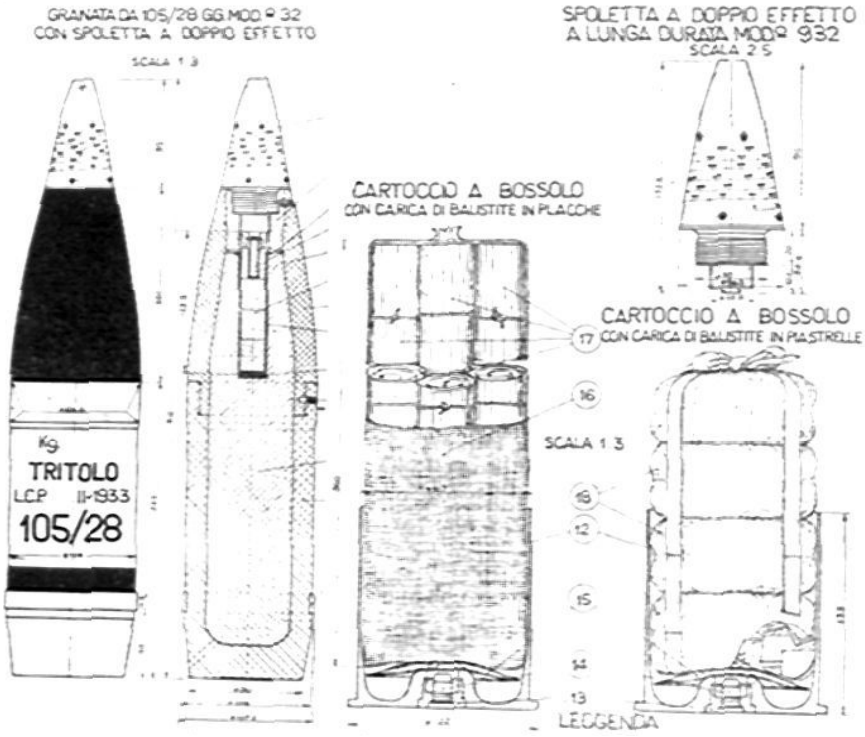
Many 65/17 light guns were found in Eritrea. Most of these weapons were built during World War I, and are decidedly inadequate for modern warfare. Obviously the shell caused a few casualties, but in the over-all picture these pieces fell woefully short of their infantry-support mission.

The 65/17 light infantry gun fired a 9½-lb. shell about 7,000 yards, at its maximum elevation of 20°. This piece weighed 1,223 lbs. This weapon, in spite of being obsolete, saw service in all the Italian campaigns of World War II. This undoubtedly accounts for the wide variety of ammunition provided for this gun and captured in all the dumps. This included a PD, fuzed, heavy wall HE; a high capacity HE with T&P fuze; a BD fuzed APHE, capped and ballistic capped; a hollow charge; and a case shot.

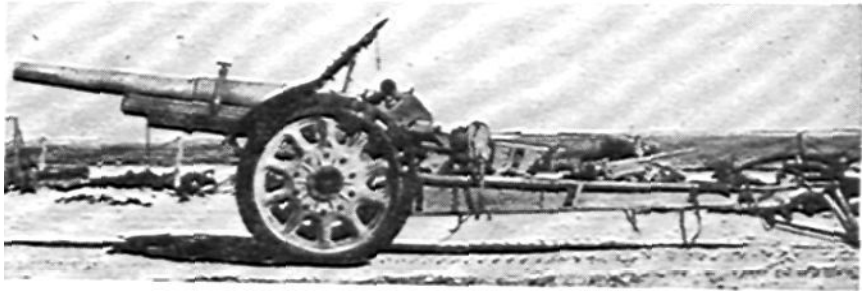
The Italians had one other mountain howitzer, one taken from the Austrians in 1918—the Skoda 75-mm piece of 1915. This they called the 75/13. As it had more range and a heavier shell, it was a more formidable weapon. The Italians thought so much of it that Ansaldo produced a large number after 1918. Pieces with the names of both manufacturing arsenals and various dates stamped on the tubes were captured in Africa. The over-all tactical advantages of such a piece might be compared with the long-obsolete U. S. 2.95″ mountain howitzer of the early 1900s.

This 75/13 mountain howitzer was the successor to the 65/17 piece. Developed by the Austrian Skoda Works, this weapon was adopted in 1915. It offered considerable advantages over its predecessor as it fired a 14-lb shell about 9,000 yards. Two types of HE were provided, as for most Italian pieces: a thinly-walled shell and a heavier-walled model. APHE could also be used, though this was rather optimistic at 1,340 foot seconds. A shrapnel was also provided. The piece was often pulled by a single horse or mule. For regular mountain assignments it was packed on seven mules. Several batteries were sent to the East African theater, prior to opening of the campaigns.

Two specimens of the 105/28 at Cappuzzo in November of 1940. At left the modernized wheels are seen. On the right is the high speed adapter or bogie.

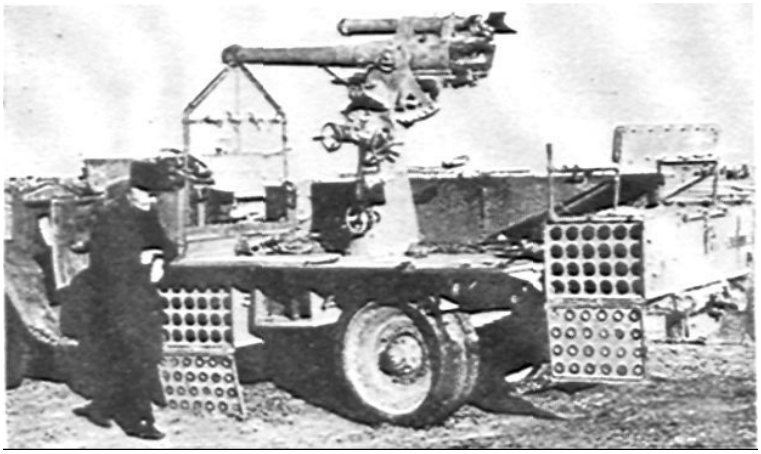


Ammunition for the 105/28. At left, time and percussion fuzed Mod. '32 HE shell. In center appear rolled powder sheets. In upper right is the Italian time and percussion fuze.

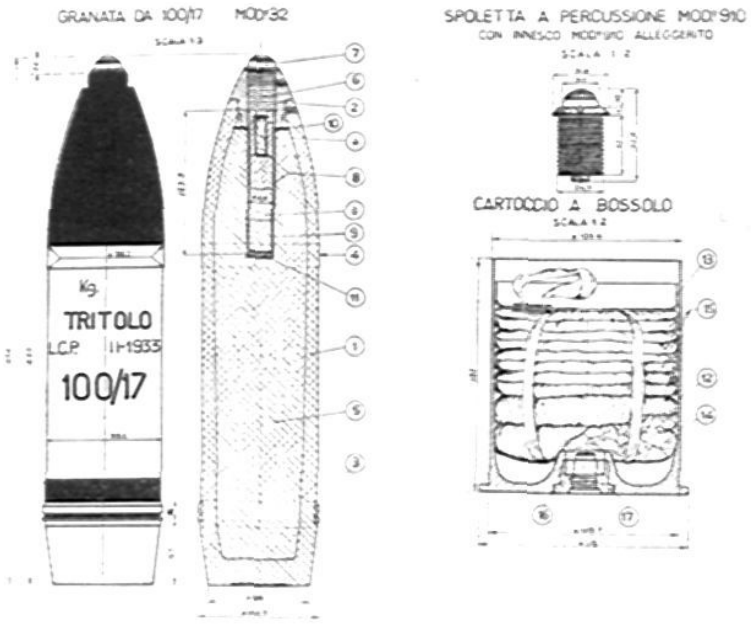


Italy's Ansaldo 105/28 gun-howitzer is patterned after the French Schneider.

Another size much in favor with the Italians was the 75/18. This chamber size reflected Krupp styles current before World War I. Its cartridge case is quite short and not bottlenecked. With an 18-caliber tube it offers about 1,350 foot seconds. Use of this design appears in three field weapons and in a fourth modification in the Semovante or SP carriage, a modification of a 13/40 tank chassis as an armored force supporting artillery weapon and with the tube provided with a brake. The field pieces differed only in their carriages; all were quite mobile. The Semovante version was on either a Fiat or Ansaldo tank chassis. With this low muzzle velocity, performance of this piece on any mount was not overwhelming. The field guns usually fired but one type of HE shell, a 14-lb., heavy-walled projectile.



1918 75/27 AA gun mounted on a truck for AT use.



Here is the modern design of shell for the 100/17 howitzer.

100/17 howitzer, made by Ansaldo.

The Semovante, however, used a lighter HE shell (about 12 lbs.); this was an attempt to improve the range slightly for armored operations. In addition an APHE, a hollow charge, and a shrapnel were issued. Shrapnel rounds were not fired from the Semovante version.

Another Italian 75-mm series existed of which there were several designs, all of them pre-World War I. This is the 75/27 group. Models 1906 and 1912 have almost identical carriages, but the model 1911 is quite different from conventional artillery carriages.

The '06 and '12 carriages have modified box trails and favor earlier Krupp designs. The model '11 carriage is a very early thought on the split trail idea. Its tube has a very odd traveling lock on the recoil system. The recoil housing remains horizontal during firing, while the tube is elevated independently of it. This gives the weapon a quite strange appearance.

One of the 75/27 versions was used to a limited extent on SP mounts, but is not believed to have been used in the African phase of operations.

A 75/34 field gun was built, but in such limited numbers as to not be encountered in the field.

The 77/28 is an odd size, an original Skoda piece with a Krupp flavor. It shoots a 13-lb. shell about 7,300 yards. It also fires a heavy-walled shell. Two patterns of shrapnel and a case shot are also provided. Some of this ammunition captured in Eritrea bore Austrian dates and marks, indicating the Italians had captured it—probably on the Piave. It is not known whether or not the Italians had renovated the ammunition since 1918.

Four model numbers of this piece existed: 05, 05/8, 14, and 17. There were minor differences. The 05/8 version could be split up for pack mules. Model 14 could be elevated to 80° for AA fire (barrage fire was the only type used, as tracking means were so inadequate). All the tubes had bronze jackets over the steel tube.

From here the bore diameter now goes up to 100-mm. Italians refer to it as a 100/17 Model 14 field gun. By U. S. standards this is a howitzer, and a short tubed one at that. When seen in photos it is often confused with the 75/27 Model 06, as they are quite similar. The 29.9-lb. shell is on the light side for this caliber but is shot about 10,000 yds. Four patterns of HE shell existed, one hollow charge, and a shrapnel. A Model 16 version also existed using the same ammunition. It differed slightly from the Model 14 pattern in that it had a little less traverse but went to 70° elevation, the earlier pieces having 48°. Both weapons were considered very accurate

by the Italian gunners. A large percentage of such weapons were in use.

Without a doubt, however, the outstanding Italian field piece was the Ansaldo 105/28. This is actually a long range howitzer and approaches nearest our own famous 105-mm howitzer. Again the Italians call this piece a field gun. Made by Ansaldo at Genoa, it basically favors the 1913/18 French Schneider design. It is reliably accurate and has a typically smooth Schneider recoil. Due to its modified box trail it has little deflection and so its field of fire is hampered. It fires a 35.5-lb. shell at 1,880 foot seconds to a 15,000-yd. range. This weapon really could have had possibilities with well trained personnel and determined leaders. Chemical, hollow charge, and five patterns of HE shell were provided (some of them streamlined).

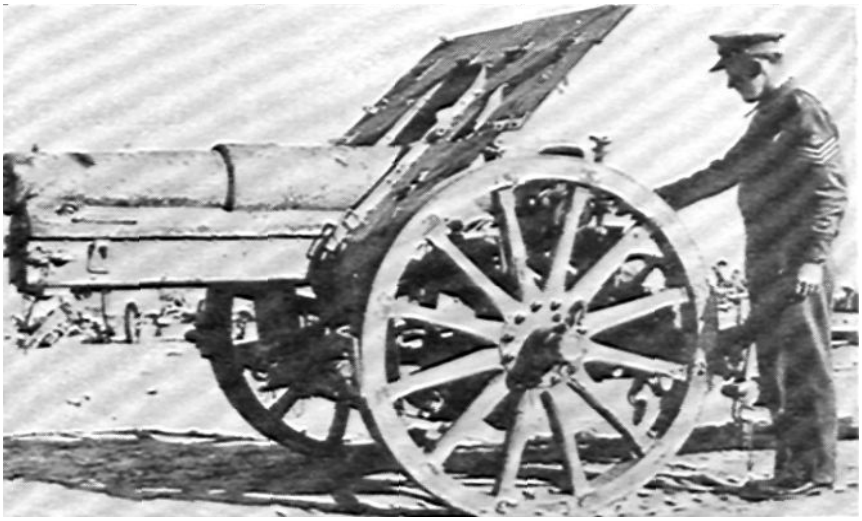
Most of these weapons found in Eritrea and Ethiopia at the close of the East African campaigns had trailer modifications for towing behind tractors. This device lifted the gun carriage wheels off the ground. The trailer wheels were cast metal and with solid rubber tires. When using these trailers the weapons were still equipped with their original steel-rimmed, wooden artillery wheels. The scant mobility of such equipment is pathetic in such a modern age as this war was fought in. A few 105/28 units like this were with Graziani's forces in Libya.

But most of the 105/28 pieces in Libya had been modernized by having cast metal wheels with heavy solid rubber tires. This eliminated the trailer idea, but in range and general field of fire this weapon was still of World War I vintage. Even so, it doubtless was the best Italian field piece available.

A 104/32 weapon existed, but was little seen and certainly not in Africa. Italian references indicate that it took the same ammunition as the 105/28. It was likely a range-increasing development.

The 6″ types of artillery in use by the Italians are rather confusing, as so many caliber lengths exist in both the howitzers and guns. Some ammunition is interchangeable for these various weapons, while some is special for the piece in question.

Howitzers start with the 149/12 group. The parent piece is the Model 14, followed by Models 16 and 16/18. All of this series use the same ammunition. They



149/13 howitzer, Ansaldo's version of the 15-cm Skoda.

Here is the newer pattern 149/40 gun. Few were ever seen, although some did reach Libya.

149/40 in action in Libya.

152/37 gun (*Ansaldo*).

CHART I

Breakdown of important data concerning the most used Italian pieces

	M.V. (*ft. sec.*)	*Range* (*yds.*)	*Elev.*	*Traverse*	*Wt. lbs.**	*Ammunition*
65/17	1,140	7,100±	20°	8°	1,223	HE, AP-HEC&BC, Hol. chg.
75/13	1,240	9,000	50°	7°	1,348	HE, AP-HEC&BC, Shrapnel
75/18 Model 34	1,300	10,300	65°	50°	1,760	HE, AP-HEC&BC, Shrapnel, Hol. chg.
(This piece was found on 3 carriage models, and was also used on the Semovente or S.P. M13/40 tank version.)						
75/27 Model 11	1,640	11,100	65°	52°	2,200	HE, AP-HEC&BC, Shrapnel, Hol. chg.
(A modification of this weapon was seen on S.P. carriages.)						
75/34	1,650	13,500	65°+		2,500	HE, AP-HEC&BC, Hol. chg. (streamlined shells)
77/28	1,762	7,300	18°	8°	2,115	HE, shrapnel and case shot
(Originally Krupp 1896 design.)						
100/17 Model 14	1,400	10,100	48°	5°	2,912	HE Shrapnel Hol. chg.
105/28	1,880	15,000	37°	14°	5,152	HE (several patterns flat-based and streamlined)
149/12 Model 14	1,100	7,500	43°	5°	5,152	HE and Shrapnel (several patterns of HE)
149/13 Model 14	1,100	9,600	70°	6°	6,040	HE and Shrapnel (several patterns of both)
149/17	1,660	12,500	65°	8°	12,096	HE, Shrapnel (several patterns)
149/40	2,600	23,900	45°	60°	11 tons	HE (2 patterns)
(Modern gun.)						
152/13 How.	1,300	10,400	45°	8°	3.6 tons	HE (several patterns)
152/37	2,270	21,800	45°	6°	6 tons	HE (several patterns)
210/22	1,870	17,400	70°	75°	15.5 tons	HE and an AP (likely anti-concrete)
(Not seen in Africa.)						
305/8	1,300	12,000	75°	120°	20.5 tons	HE (base fuzed and Shrapnel)
(Skoda mortar 1916 and not seen in Africa.)						
ANTIAIRCRAFT ARTILLERY						
		Vertical Range (*feet*)				
2-cm Breda	2,755	7,000	80°	360°	677	HE, SD and AP
2-cm Scotti	2,720	7,000	85°	360°	501	HE, SD and AP
37/54 Breda	2,620	13,500	90°	360°		HE—time fuzed HE—PD fuzed
75/27 Krupp	1,500		85°	360°		HE and AP
75/46 Ansaldo Model 34	2,350	27,200	90°	360°	3.3 tons	HE and AP
75/50 Skoda	2,690	30,000	85°	360°	2.8 tons	HE
75/53 French Model 30	2,280	31,000	85°	360°	2.4 tons	HE
76/40 Ansaldo	2,460	31,000	85°	360°	2.2 tons	HE
90/53 Ansaldo	2,500	39,300(?)	85°	360°	5.1 tons	HE and AP

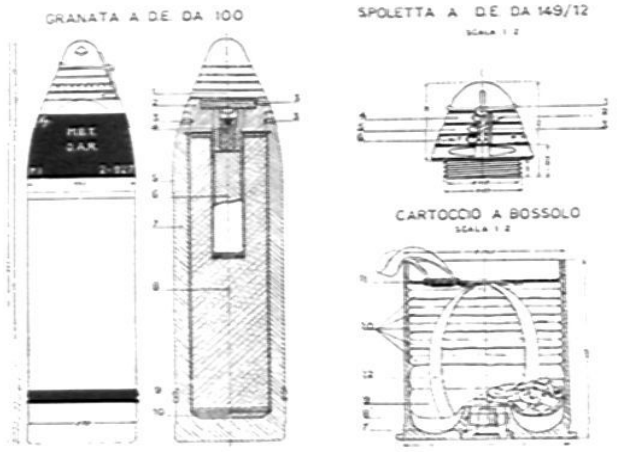
*Unless noted otherwise.

have identical range tables, shooting an 85-lb. shell about 7,500 yards. As the pieces differ only in recoil designs, they offer illustrations of Italian development in World War I. HE shells in four patterns varied from 85 to 91 lbs., and in addition a shrapnel was provided.

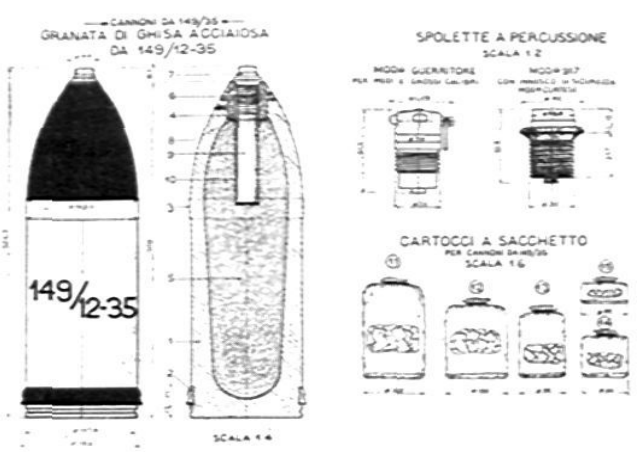
A confusing situation exists where a 149/13 piece was also used. This weapon, quite different from the 149/12, is largely of Skoda extraction though made by Ansaldo. It is the model of 1914. Further confusion exists as certain 149/12 rounds could be used as well as six newer types which were provided. This howitzer fired a 93-lb. shell 9,600 yards and used others ranging from 81 to 93 lbs. It was also provided with three shrapnel patterns of 67, 80, and 93 lbs. It used five charges and could be elevated to 70°.

Two other 149-mm pieces existed, also called howitzers. These were in caliber lengths of 17 and 19. Increased ranges of 12,500 and 16,000 yds. were claimed for them, using shells lighter than 95 lbs. Little substantiating data is available on these two.

In 6″ guns the Italians throughout the African campaigns relied largely on very old patterns, the majority of which had no recoil mechanism and employed rockers to check the recoiling piece. Such weapons will not be enlarged on here. It is apparent, however, that the Italians realized the need for a reliable, accurate weapon which would give a satisfactory range. Such a piece was



Old pattern shell and charges for the 149/13 howitzer; fuze in upper right is time and percussion type.



This old-style shell was used in either the howitzer or the gun.

developed and became known as the 149/35 gun. Its limitations lay in practically no traverse, necessitating shifting of the carriage. It did shoot a shell weighing about 80 lbs. some 17,900 yards, however. Six patterns of HE shells were provided, one of which weighed 101 lbs.

Around 1940 this caliber of gun was completely redesigned and called the 149/40. Its carriage was split-trailed. A new HE round designed for it weighed 93 lbs. The heavy 101-lb. shell of the 149/35 could also be used for shorter ranges. With the new shell a velocity of 2,600 foot seconds and range of 23,900 yards was claimed. These guns do not appear to have seen much action, although a few were taken at the close of the Libyan Campaigns and may have been in position at Alamein.

In further complication of the 6″ type of weapon, the next caliber in line is the 152/13 howitzer. This is an older pattern firing a 99-lb. shell about 10,000 yards. Four deisgns of HE shells were provided, most of which were copies of British designs and used British fuze patterns.

This is followed in sequence by a 152/37 gun, which fired a 123-lb. shell—an exceptionally heavy projectile in this caliber. In addition, this gun was provided with a 96-lb. shell for which a range of 21,800 yards was claimed. A 109-lb. shrapnel was provided too. This piece, like so many other Italian guns, did not have much traverse and required much relaying.

A still longer-tubed 152 existed in which the caliber length was 45. This piece again was confusing in its ammunition. 2,730 foot seconds velocity and a range of 21,300 yards were claimed. Much of the ammunition intended for the 152/35 could be used in this piece. Two APHE and two HE shells were provided, the shells marked for use in both weapons.

A heavy siege mortar was in existance, though not seen in Africa. This was known as the 210/8. Three HE shells were provided, weighing 133, 221, and 228 lbs., respectively. The lighter shell gave 1,200 foot seconds and a range of 8,700 yards.

In 1935 the length was increased to 22 calibers and the carriage underwent a lot of changes. With a 222-lb. shell a range of 17,000 yards was claimed and an APHE was

A 104/32 Ansaldo at El Guettar. Tunisia, 23 March 43.

CHART II
General Listing of Italian Artillery by use and caliber

FIELD ARTILLERY

65/17
70/15
75/13 Austrian Skoda
75/18 M34, 75/18 M35, 75/18 M40 } Newer Patterns—same ammunition.
75/18 Semovante (any of the 75/18 tubes but on SP mount, usually the M13-40 tank).
75/27 Mod. 06, 75/27 Mod. 11, 75/27 Mod. 12 } Same ammunition. The shells for all these 75-mm calibers were interchangeable, some even having as many as 3 weapons indicated.
75/34
77/28 Austrian
100/17 Mod. 14, 100/17 Mod. 16, 100/22 Mod. 16, 100/22 Mod. 19, 100/22 Mod. 33 } Same ammunition.
104/32, 105/28 } Same ammunition.
149/12 Mod. 14, 149/12 Mod. 16, 149/12 Mod. 16 modified 18, 149/13, 149/17, 149/19, 149/35 Old pattern, 149/40 } Same ammunition.
152/13
152/37
152/45
155/25
210/8
210/8 Fist
210/22 Mod. 35
260/9 M1916
260/9 Skoda
305/8 Models 11 and 11-16 (Modified)
305/10
305/17 Mod. 1916 and 1917
380/15 Skoda
420/15 Skoda

A. T. GUNS

47/32 Breda
47/32 Austrian Bochler
47/50 Schneider (French captured)
75/27 Series, using AP, Hollow charge
75/46 AA Dual purpose
90/53 AA Dual purpose
100/17 series, using AP, Hollow charge

A.A. GUNS

2-cm Breda M.35 (fully automatic)
2-cm Scotti (Isotta Fraschini)
37/54 Breda
75/27 (1918)
75/46
75/50 Skoda, 75/50 Ansaldo } Same ammunition.
75/43 Dutch (Vickers)
75/43 M.1930 (French) also Models 33 and 36
76/40 Ansaldo
76/45 Ansaldo
77/28 (1918)
90/53 Ansaldo
102/35
102/47

SEACOAST GUNS

57/30
57/43
120/21, 120/25 } Same ammunition.
120/40
149/35
152/32, 152/50 } Same ammunition.
280/9 (two versions)
280/10, 280/11, 280/16 } Same ammunition.
305/17
305/50
381/40
420/12

152/45 coast defense gun assembled for transport.

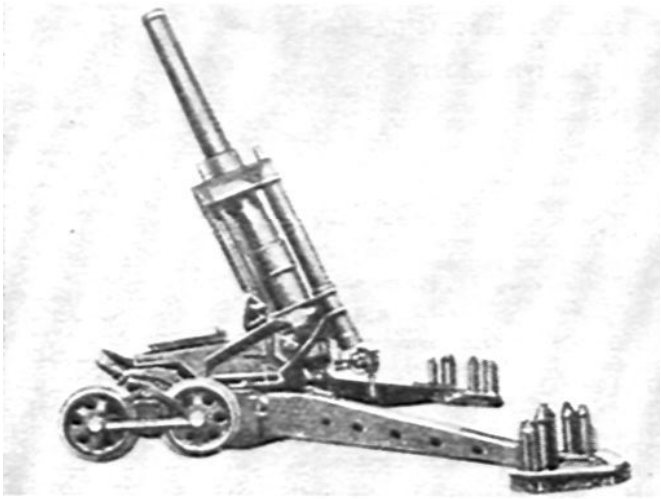
introduced. This weapon had a 70° traverse.

As we near the end of the list we find two 260/9 mortars firing up to 480-lb. shells. The 305/8 Skoda mortar series was left over from Austrian captures at the Piave. Several tube lengths existed in this caliber, with varying ranges for up to 970-lb. shells. The 1916 version of 17-caliber length was provided with eight shells weighing from 642 to 970 lbs.

Finally, the Austrian Skoda 38-cm mortar winds up the list. The Italians called this the 380/15, Model 1916. This mortar was exceedingly heavy, weighing 80 tons. It fired a shell weighing 1,600 lbs. about 16,300 yards. These heavier siege weapons were not seen at all in the African campaigns.

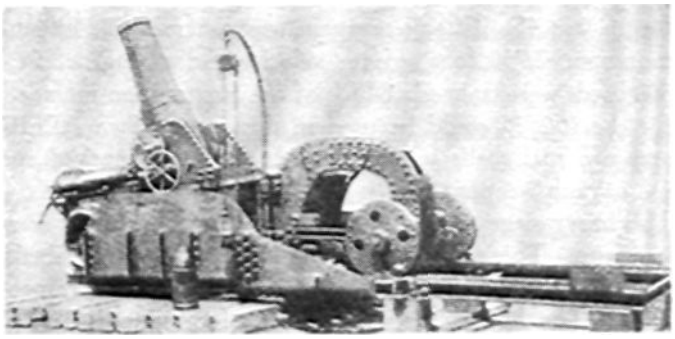
Chemical shells, some filled with mustard and tear gas, were found in Eritrea for some of the 75 and 149-mm weapons. None, however, appeared in the captured ammunition dumps taken in Libya. It is believed no records' exist of any chemical shells (other than normal smoke rounds) being used by the Italians during World War II, from any of their cannons.

The 20-mm Breda AA gun was considered by the Allies in the Western Desert as a worthwhile capture and many were used by the Eighth Army. This appears to be one of the few good weapons produced by the Italians. As both AP and HE were provided, it served as a dual-purpose weapon. Its chamber design was copied from the original Solothurn; actually, both German 2-cm Flak 30 and 38 and the Breda ammunition were interchangeable. However, the German rounds worked better in the Breda than vice versa. Strip fed, the Breda gun developed about 2,500 foot seconds.

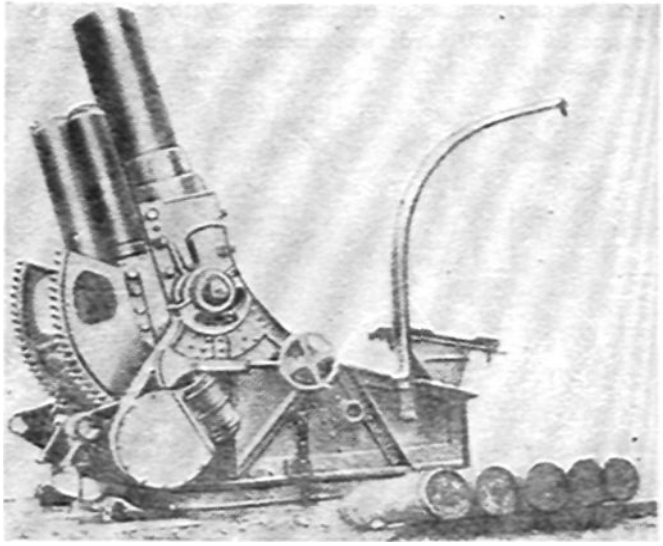


21-cm Ansaldo mortar, M. 210/22.

26-cm Schneider mortar, M. 260/9S.



21-cm mortar, M.D.S. 210/8.



30.5-cm Skoda mortar, M. 305/10.

152/45 coastal gun at Palermo, Sicily, 26 October 43

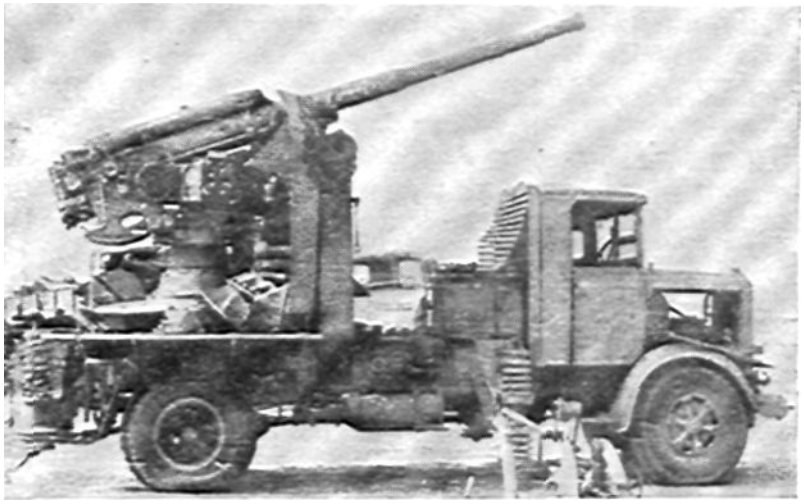
A very old AA gun used considerably in East Africa was identified as a 75/27. This had appeared at the close of 1918 as an AA gun. In Libya it was relegated to an AT gun and mounted on truck bodies. It is possible that this was a German modification, as most such units captured bore the German cross painted on the side. This gun was provided with standard HE and APHE rounds. Several truck-mounted units were captured at Alamein.

The remaining 75 for AA use was the 75/46 Model 1934 weapon. It had a peculiar carriage, with the pedestal mount folding back on the closed trails for transport. The gun assembly was partially upside down when in transport. The pedestal was operated by a winch arrangement on the bottom carriage.

While a reasonably good gun, this piece was only 75-mm and of 2,550 foot seconds. To combat modern aircraft a better and larger weapon than this is necessary.

The Italians likely realized this and developed a 90/53 weapon, but although this gun approached the operational value of the famed German 8.8 Flak 18 the Italian piece only realized 2,550-foot-seconds velocity and actually fell far short of necessary performance demanded in 1942-43. As few had been completed by late 1942, none saw AA use in the African theater. Most were mounted on trucks and assigned dual-purpose tasks which were mainly AA. Before the fall of Tunisia a few 90/53s appeared mounted on a modified 13/40 tank chassis as a Semovante (SP). Still another few were later captured on original mountings, used mainly by the Germans in the early part of the campaigns in Italy.

Thus confusion in ordnance engineering and design within the Italian Army is apparent—the artillery was a hodge podge of patterns, sizes, and shapes, failing in the overall fulfilling of their missions.



90/53 Ansaldo AA-AT gun on dual-purpose mount on Lancia 5-cylinder diesel truck; captured at El Alamein in November 1942.

CHANGES IN ARMY MAGAZINES

Artillerymen in particular will be interested in changes taking place in *The Ordnance Sergeant* and *Army Motors*. Both carry material that is useful not only in the Army, but in following many hobbies and businesses as well.

After the September issue, the Army will no longer issue *Army Motors*. It will be continued, though, by its civilian staff, as a commercial enterprise. Except for ownership it will be exactly as its readers expect it to be month after month, changing only as it has always done to meet changing Army maintenance requirements. Paid advertising will produce profit revenue so that it can be furnished to field troops in large quantities at absolute cost. Individual subscriptions cost $3 per year or $5 for two years. *Send directly to Army Motors* Magazine, Industrial Bank Bldg., Detroit 26, Mich.

The Ordnance Sergeant, which has had a free circulation as a restricted magazine, goes on a straight subscription basis without any free distribution. Cost is $3 per year, which all interested persons should *send directly to The Ordnance Sergeant*. The Ordnance School. Aberdeen Proving Ground, Md.